Scopus 23: 13-28, July 2003

Notes on ten restricted-range birds in the Udzungwa Mountains, Tanzania

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The Udzungwa Mountains of south-central Tanzania (Fig. 1) hold more rare forest birds than any other site in eastern Africa (Stuart 1985). According to Stattersfield *et al.* (1998), the Udzungwas support 25 of the 34 'restricted-range species' (i.e. species with a world range of less than 50000 km²) in the 'Tanzania-Malawi Mountains Endemic Bird Area'. This is more species than for any other site within this Endemic Bird Area (the Usambara Mountains are second with 15 species). Of these, 20 species are confined to moist evergreen forest. Eleven of the 20 forest species are globally threatened (one is Endangered and 10 are Vulnerable) (IUCN 1996). Four of these are endemic to the Eastern Arc Mountains while two other species are endemic to the Udzungwas. These latter two are the Rufous-winged Sunbird *Nectarinia rufipennis* (Jensen 1983) and the Udzungwa Forest Partridge *Xenoperdix udzungwensis* (Dinesen *et al.* 1994). *Xenoperdix* is an endemic genus, as well as an Endangered genus and species.

From 27 October–15 November 1998 we undertook a survey of the primates within the Udzungwa Mountains National Park (Fig. 2) as part of a long-term primate monitoring programme for this region (Butynski *et al.* 1998, Ehardt *et al.* 1998). During this research we also made opportunistic observations of the avifauna. Our observations of 10 of the restricted-range species of birds are presented here.

Background

The Udzungwa Mountains (7°40'–8°40'S; 35°10'–36°50'E) extend roughly 200 km north-east/south-west, covering an area of approximately 10000 km² (Fig. 2). The most recent estimates of the area covered by natural forest vary from 1017 km² (Burgess *et al.* 1998) to 1360 km² (Fjeldså 1999) to 1899 km² (Dinesen *et al.* 2001). At least some of this variation in estimates is due to differences of opinion over what forests should be included within the 'Udzungwas' area (e.g. the Image, Kisinga and Dabaga Forests). The south-east-facing escarpment rises from 300 m to 2576 m, and includes lowland, submontane and montane forest. This represents one of the greatest continually forested altitudinal gradients in East Africa (300–2250 m). Moist forest extends along much of the south-eastern scarp with drier forest, woodland and grassland on the western plateau. Mean annual rainfall

along the south-eastern scarp is about 2000 mm, while on the western plateau it is about 900 mm. In addition, there is a substantial mist effect over the montane forest and subalpine zones. There is a single pronounced dry season from May to December in the west, and from June to October in the east (Rodgers & Homewood 1982, Dinesen *et al.* 2001).

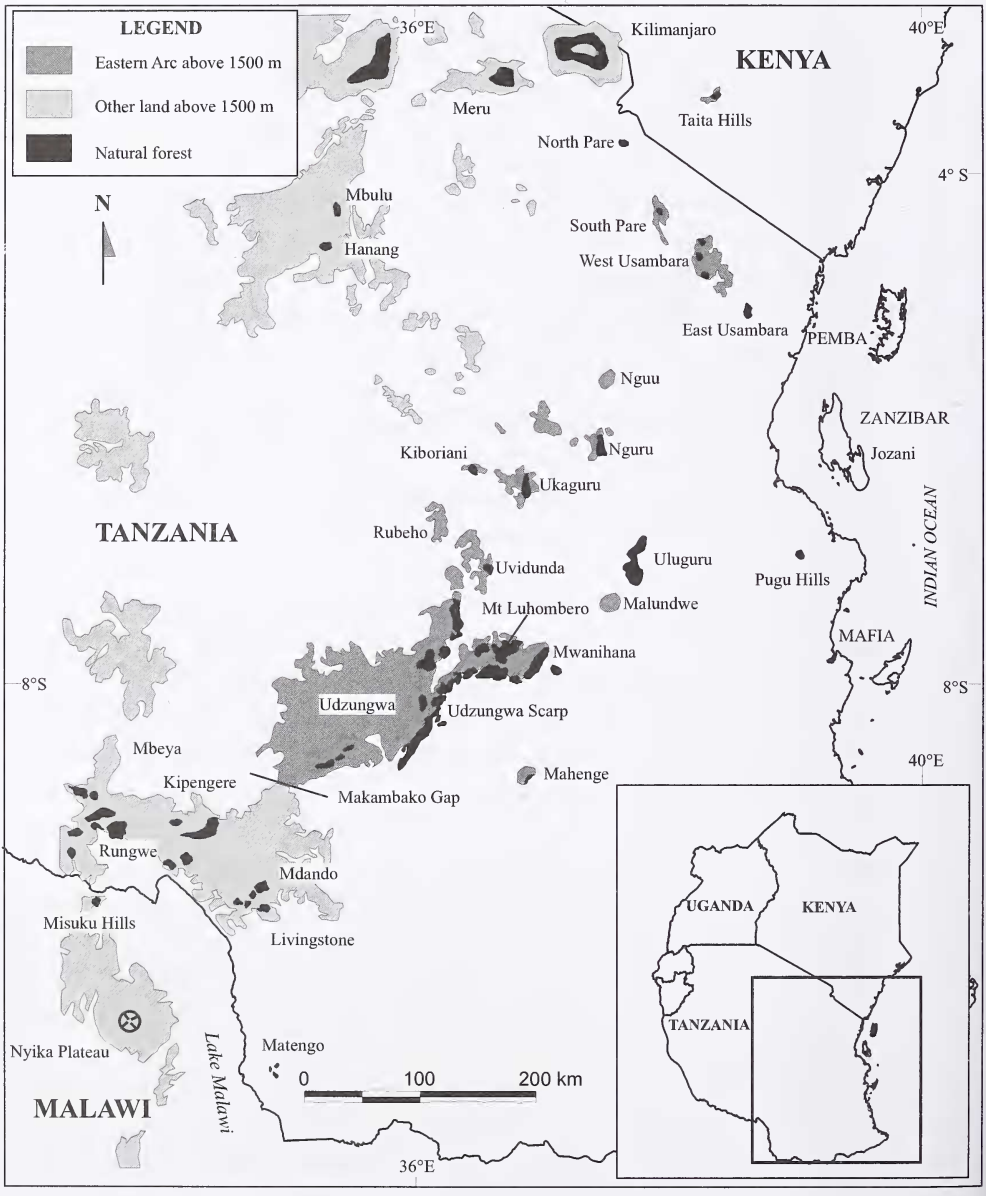

Figure 1. Distribution of land above 1500 m and the montane forests of central and eastern Tanzania. Map adapted from Stuart *et al.* (1993).

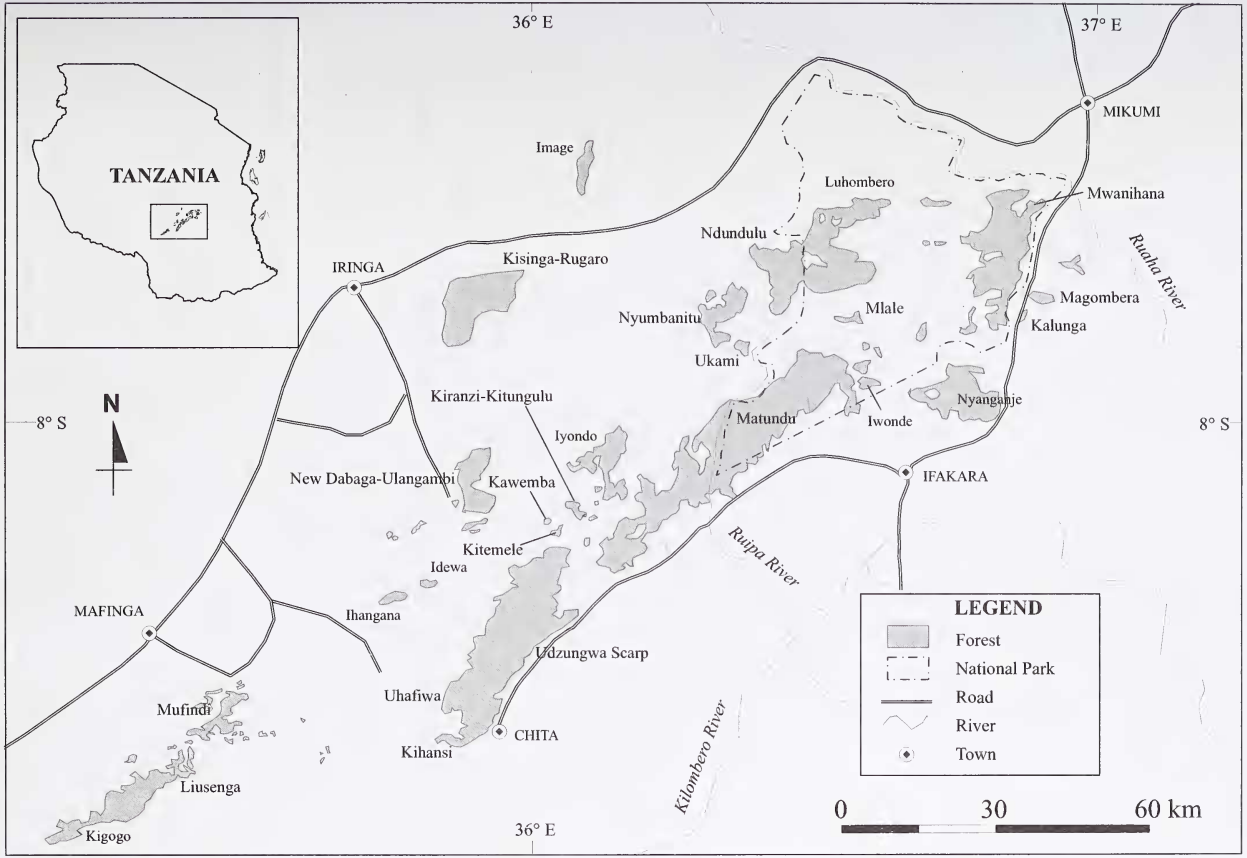

Figure 2. Distribution of the larger forests in the Udzungwa Mountains and the location of the Udzungwa Mountains National Park. Map adapted from Dinesen (1998). The Luhombero, Ndundulu, Nyumbanitu and Ukami Forests are often referred to as the West Kilombero Forests.

Although not well-surveyed, the Udzungwas are already recognised for their many endemic and rare species, and for unusually high species richness (Lovett & Wasser 1993, Stuart *et al.* 1993, Burgess *et al.* 1998, Dinesen 1998). As such, they probably represent biologically the most important forest block in East Africa (Rodgers & Homewood 1982, Jensen & Brøgger-Jensen 1992, Dinesen *et al.* 2001).

During the 1998 survey, we visited four forests (Iwonde, Matundu, Mlale and Luhombero) (Fig. 2). To the best of our knowledge, the Iwonde (11 km², 1060–1480 m) and Mlale (3 km², 1050–1350 m) Forests, and the sections of the Matundu (522 km², 300–650 m) and Luhombero (250 km², 1350–2500 m) Forests that we surveyed, have never been visited by primatologists or ornithologists. All four of these forested areas are pristine and well-protected, being within a national park and far from human habitation.

The observations reported here are all from the Iwonde and Luhombero Forests. Iwonde is largely isolated from other forests by extensive grassland, although there appears to be a narrow corridor connecting it to the much larger and much lower Matundu Forest to the west. Iwonde holds forest of exceptionally large trees and an open forest floor. *Parinari excelsa*, *Newtonia buchananii*, *Strombosia scheffleri* and *Chrysophyllum* sp. are among the larger and more common species of trees here.

The forests of Luhombero (250 km², including Ndundulu), Nyumbanitu (49 km²) and Ukami (6 km²), are often referred to as the 'West Kilombero Forests' (305 km²). The largest of these, Luhombero Forest, lies at the northern extreme of the Udzungwas and includes the highest mountain in the Udzungwas (Mt. Luhombero, 2576 m). Montane forest covers much of the south-facing slope. *Albizia gummifera*, *Nuxia congesta*, *Cussonia spicata*, *Cassipourea gummiflua* and *Neoboutonia macrocalyx* are common on the lower slopes. The most noticeable trees here are the many extremely large mahoganies *Entandrophragma excelsum*; some of these have boles with diameters of more than 6 m at 3 m above the ground, and buttresses over 3 m high that extend more than 14 m from the bole. At about 1800 m the montane forest gives way to bamboo *Sinarundinaria alpina* and a dense herbaceous ground cover dominated by *Mimulopsis* spp. At about 2000 m, *Podocarpus falcatus*, *Faurea saligna*, *Hagenia abyssinica*, *Rapanea rhododendroides*, *Xymalos monospora*, *Hypericum* sp. and other species become intermixed with bamboo. *Hagenia* woodlands are common in the valleys from 2000–2400 m. The bamboo/forest mix ends at about 2200 m, where *Ocotea usambarensis* and *H. abyssinica* begin to form dominant stands. Beginning at about 2300 m, these trees are covered with thick moss. This cloud forest type reaches approximately 2500 m, where subalpine vegetation begins and extends to the summit.

Udzungwa Forest Partridge *Xenoperdix udzungwensis* (Endangered).
This recently discovered species and genus (Dinesen *et al.* 1994) has no close relatives on the African continent and is only known from the Ndundulu (western Luhombero) and Nyumbanitu Forests on the drier west plateau of the Udzungwas at 1350–1900 m. The estimated range of this species is extremely small, roughly 161 km² (Dinesen *et al.* 1993, 2001).

On 13 November, TMB encountered a flock of at least three *X. udzungwensis* at 09:50 on the southern slope of Mt Luhombero. They were at 1750 m at the base of the eastern-most of the two enormous granite domes that dominate this part of the park (GPS reading 7°48′23″S; 36°38′39″E). At first the flock scattered and hid, but after about 20 minutes the birds began to make contact calls and eventually the flock reunited (within 5–9 m of TMB) and was observed for several minutes in good light. The low volume, soft 'cluck' contact call was the only vocalization heard. This is presumably the call that Dinesen *et al.* (1994) refer to as "subdued, high-pitched peeping notes". This flock was located on very rugged, steep, rocky, well-drained ground in moderately open montane forest, near a dry streambed with scattered large boulders. Trees here included *Albizia* sp., *Dombeya* sp., *Ficus* sp., *Polyscias fulva*, and *Parinari excelsa*.

This was the only confirmed sighting of this species during 5 full days of survey work by two of us in the Luhombero Forest. On two occasions, CLE flushed partridge-like birds well within the forest which were probably of this species, but they were not seen well. These were at 7°49′1″S; 36°35′40″E (1600 m) and at 7°48′30″; 36°35′18″E (1800 m).

The observation described here is the first for *X. udzungwensis* within the Udzungwa Mountains National Park. The birds seen on Mt. Luhombero are probably part of the same population as in the Ndundulu Forest (western Luhombero), as there is continuous forest between these two areas. This sighting was about 12 km inside the western boundary of the park, and therefore at least 12 km from the nearest previous known location for this species (in the Ndundulu Forest). Dinesen *et al.* (2001) assumed that *X. udzungwensis* would be in this locality, so this sighting does not change their estimate of the species' range. They estimate the world population at about 3700 individuals. However, in the Ndundulu Forest, where they conducted their intensive research, they found *X. udzungwensis* to be locally common and estimated the population density at 25 birds/km². We doubt that the density was this high on the part of Mt Luhombero where we conducted our surveys. If so, the estimate of 3700 birds may be too optimistic.

Usambara (Nduk) Eagle-owl *Bubo (poensis) vosseleri* (Vulnerable).
Initially believed to be confined to the Usambara Mountains (Collar & Stuart 1985, Zimmerman *et al.* 1996), this large owl is now known from 1500

m in the Uluguru Mountains (Hunter *et al.* 1998; Stattersfield *et al.* 1998), from South Pare (Burgess *et al.* 1998), and from at least two sites at about 1700 m in the northern Udzungwa Scarp Forest Reserve in the Udzungwas (Dinesen *et al.* 2001, D. C. Moyer pers. comm., TMB & CLE unpubl. data).

We observed and heard an Usambara Eagle-owl on 31 October and on 1 November during both of two nights spent at one camp site in Iwonde Forest (1200 m, 7°56′07″S; 36°38′06″E). This is the first record for this species within the Udzungwa Mountains National Park. When first seen (16:25), the owl was being mobbed by several Square-tailed Drongos *Dicrurus ludwigii*. It called a few times at 16:30 while still being mobbed.

Evans *et al.* (1994) state that in the Usambaras, this owl "was only ever heard after dark, between 20:00 and 04:30, never at dusk or dawn." This is not the case with the Usambara Eagle-owl in the Udzungwas, nor with Fraser's Eagle-owl *Bubo poensis* in Central Africa (see below) (TMB pers. obs.). Darkness falls in the Udzungwas at about 18:45 in November. Long bouts of calling began at 18:50 on 31 October, and at 18:38 on 1 November.

We only heard or saw one owl at a time. Thus, we cannot say if more than one owl was present. Although the bird on Iwonde was heard to call around 100 times during the two nights we were at this camp, the only call heard was the loud, low-pitched, 'wubbering' call, 'wb-a-wb-a-wb-a-wb-a', as described by Evans *et al.* (1994). Each call is comprised of about 38–42 'wb-a' notes, given very rapidly (*c.* 5–6/s). This is apparently the "loud purring" call of Fry *et al.* (1988). In Iwonde, this call from the one bird had a mean duration of 7 s (n = 19, range = 6–8 s), and a mean interval between calls of 39 s (n = 14, range = 20–70 s). Evans *et al.* (1994) state that the duration of this call in the Usambaras is 3–4 s.

Fraser's Eagle-owl in the Itombwe Forest of eastern Democratic Republic of Congo (former Zaire) gives the same call (TMB pers. obs.). One individual tape recorded by TMB in the Itombwe Forest during April 1996 (Kilumbe Camp 1, 1920 m, 3°52′S; 28°56′E) gave 'wubbering' calls with a mean duration of 9 s (n = 6, range = 8–10 s), and a mean interval between calls of 21 s (n = 5, range = 8–36 s). The duration and interval of this call, however, presumably vary within the same individual, and among individuals within the same population, depending upon a number of variables. One owl in Itombwe gave bouts of 15–30 'wubbering' calls. In Itombwe, this owl starts calling as early as 30 minutes (18:00) before dusk (18:30), and as late as dawn (05:30), with calls given most frequently at dusk, during the early evening, and just before dawn. One individual appeared to be actively hunting at 08:00.

There is disagreement over whether the Usambara Eagle-owl is a species distinct from *Bubo poensis*. For example, White (1974), Collar & Stuart (1985), Turner *et al.* (1991), Sibley & Monroe (1990), Stuart *et al.* (1993), Evans *et al.* (1994), Zimmerman *et al.* (1996), Dinesen (1998), and

Stattersfield *et al.* (1998) treat the Usambara Eagle-owl as a distinct species, while Moreau (1964), White (1965), Britton (1980), Stuart & Turner (1980), Fry *et al.* (1988), Short *et al.* (1990), Dowsett & Dowsett-Lemaire (1993), and Dowsett & Forbes-Watson (1993) consider it to be a subspecies, *Bubo poensis vosseleri.*

As mentioned above, the only call heard given by the Usambara Eagle-owl in Iwonde was the 'wubbering' call. This was also the only call heard by us in the northern Udzungwa Scarp Forest Reserve in 2000 (TMB & CLE unpubl. data). This also seems to be the only call mentioned in the literature for the Usambara Eagle-owl (Evans *et al.* 1994, Hunter *et al.* 1998). In Itombwe, other calls were commonly given; for example, the drawn out high-pitched whistle 'twowoot' call (as described by Fry *et al.* 1988). The possible absence in the Usambara Eagle-owl of some of the calls of Fraser's Eagle-owl would lend support to its consideration as a separate species, as does the fact that their known geographic ranges are more than 1000 km apart. The 'wubbering' calls of the Usambara Eagle-owl and of Fraser's Eagle-owl have been described as "similar but significantly different" (White 1974), and as "distinct in pattern" (Evans *et al.* 1994). Nonetheless, the Usambara Eagle-owl appears to respond, at least somewhat, to the loud playback calls of the Fraser's Eagle-owl (Hunter *et al.* 1998). Our own vote is cast with those who refer to this owl as a megasubspecies within *B. poensis*. The habitats are similar (both occur in lowland and montane forest), the structure of the complex 'wubbering' call seems identical, or nearly so, and the plumage and size differences (although distinct) are not great (Fry *et al.* 1988).

As with *Bubo poensis*, dwarf galagos (bushbabies) *Galagoides* spp. react strongly to the calls of the Usambara Eagle-owl by giving long series of alarm and other calls. We suspect that the Fraser's Eagle-owl and the Usambara Eagle-owl are both important predators of *Galagoides* spp. Fry *et al.* (1988) list galagos as prey of *B. poensis*.

In the Usambaras, this uncommon owl occurs both in lowland and montane forest (200–1500 m) (Britton 1980, Evans *et al.* 1994). In the Ulugurus and Udzungwas, the Usambara Eagle-owl is only known from montane forest at 1550 m, and 1200–1700 m, respectively. The bird faunas of some parts of the Udzungwas have been fairly well investigated, particularly along the south-east-facing escarpment. The Usambara Eagle-owl is not known to occur in either the lowland or montane forests of the best studied areas (Stuart & Jensen 1981, Stuart *et al.* 1981, 1987, Jensen & Brøgger-Jensen 1992, Dinesen *et al.* 1993, 2001), and we did not find this species elsewhere in the Udzungwas during our 1997 and 1998 surveys. This owl is apparently an uncommon and localized species in the Udzungwas, perhaps limited to areas of large trees, and within a higher

and narrower altitudinal range (1200–1700 m) than in the Usambaras (200–1500 m).

Rufous-winged Sunbird *Nectarinia rufipennis* (Vulnerable).
The Rufous-winged Sunbird was encountered only once during our survey. We found a male and female pair at 1400 m in a fairly open area (light gap) within the forest near the top of Iwonde Mountain (7°56′32″S; 36°37′41″E) on 3 November. This is well within the known altitudinal range for the species (600–1800 m, but usually above 1000 m) (Stuart *et al.* 1987, Dinesen *et al.* 2001). This Udzungwa endemic was previously known only from the West Kilombero, northern Udzungwa Scarp, Iyondo, and Mwanihana Forests (Jensen 1983, Dinesen *et al.* 1993, 2001). This observation represents a second locality within the Udzungwa Mountains National Park and a range extension of roughly 30 km from the nearest known site (Mwanihana Forest).

The only other two sunbirds that were found in Iwonde Forest during 3 full days of observations were the Eastern Olive Sunbird *Nectarinia olivacea* and the Uluguru Violet-backed Sunbird *Anthreptes neglectus*. Both species were common and occurred throughout this forest. Noticeably absent was Moreau's Sunbird *Nectarinia moreaui*, but Iwonde Forest is probably slightly too low to support a population of Moreau's Sunbirds (see below).

The pair of Rufous-winged Sunbirds was watched by TMB from 11:00-13:00 at a distance of 4–7 m in good light. They were very active, coming and going from a 10 m high flowering *Carpolobia* sp. *cf. conradsiana* tree. They were observed taking nectar from this tree, as well as frequently gleaning insects from the leaves of neighbouring trees at levels of 3–10 m above the ground. Most of the trees on the edge of this small gap in the forest had a diameter at breast height of 20–50 cm.

The female observed on Iwonde appeared to be as described by Jensen (1983). Interestingly, the male appeared to differ considerably from the type male as described by Jensen (1983). Here is a summary of those differences:

Type: "The crown, face, nape, back, wing-coverts and upper tail-coverts are iridescent spectrum violet, but showing a turquoise blue gloss in certain lights. From the base of the lower mandible to the upper chest there is a triangular glossy bronze patch."

Iwonde: The entire head, including the throat down to the chest, was iridescent spectrum violet. That is, there was no triangular glossy bronze patch from the base of the lower mandible to the upper chest.

Type: "There are two bands across the chest, the upper one being identical in colour to the back and about 4 mm wide. The lower one is chestnut and 10 mm wide."

Iwonde: The upper breast band was either absent or so much narrower than 4 mm as to be invisible in the field. The lower chest band was true red

(if not scarlet red), not chestnut, and differed in colour very noticeably from the cinnamon-rufous of the secondaries and primaries. Moreover, the band was fairly wide, more like 15 mm than 10 mm.

In his discussion of the possible systematic position of the Rufous-winged Sunbird, Jensen (1983) states that "...in the genus *Nectarinia*, there appears to be no obvious affinity to any particular superspecies or species group...". He noted, however, some resemblance to the double-collared sunbird complex (Hall & Moreau 1970). The main differences in colour and colour pattern between *N. rufipennis* and members of the double-collared sunbird complex noted by Jensen are that: (1) the back of *N. rufipennis* is metallic blue, not metallic green, (2) the breast band is chestnut red as opposed to scarlet red, (3) the edges of the flight feathers are rufous instead of olive green, and (4) the triangular bronzy throat patch is lacking in the double-collared sunbirds. The observations of the male in Iwondi seem, at least in this one case, to reduce or eliminate the differences noted in numbers two and four above. This strengthens the likelihood that *N. rufipennis* has affinity with the double-collared sunbird complex.

More in-the-hand and close observations of *N. rufipennis* are obviously required. The differences between the Iwonde male and the type male suggest that (1) the type may be a bird that is either immature, in non-breeding plumage, or in moult, or (2) there is considerable variation in colour and colour pattern among adult males of this species.

The observation of only two *N. rufipennis* during the 1998 survey suggests that this species is uncommon in the forests surveyed. *N. rufipennis* has yet to be observed in the Matundu Forest (which, with a maximum elevation of 650 m, is almost certainly too low) or in the Mlale Forest (7°51′39″S; 36°37′38″E). *N. rufipennis*, and other species noted in this paper, may be present in Mlale Forest but over-looked, as only 1 full day of survey work was conducted there.

Moreau's Sunbird *Nectarinia (mediocris) moreaui* (Near Threatened).
Moreau's Sunbird is known from the Nguru, Nguu, Rubeho, Ukaguru, Kiboriani, Uvidunda and Udzungwa Mountains (Stuart *et al.* 1987, Jensen & Brøgger-Jensen 1992, Fjeldså *et al.* 1996, Stattersfield *et al.* 1998, D.C. Moyer pers. comm.).

The taxonomic status of Moreau's Sunbird remains unclear. It is treated as a species by Mackworth-Praed & Grant (1955), Hall & Moreau (1970), Britton (1980), Stuart & Turner (1980), Stuart & van der Willigen (1980), Collar & Stuart (1985), Stuart *et al.* (1987, 1993), Short *et al.* (1990), Stattersfield *et al.* (1998), and Fry *et al.* (2000). Sclater & Moreau (1933) classify it as a subspecies of the Eastern Double-collared Sunbird *Nectarinia (Cinnyris) mediocris moreaui*, whereas Dowsett (1986) lists it as *Nectarinia mediocris fuelleborni*. White (1963), Dowsett & Forbes-Watson (1993), and

Sibley & Monroe (1990) merge *N. moreaui* with Loveridge's Sunbird *Nectarinia loveridgei*.

The taxonomic situation for this sunbird in the Udzungwas appears particularly interesting as indicated by the following two quotes:

Stuart *et al.* (1987) state, "It is also common, however, in the montane parts of Mwanihana Forest from 1500 up to at least 1800 m. Stuart & van der Willigen (1980) have suggested that *N. moreaui* is a hybrid species between the wide-spread Eastern Double-collared Sunbird, *N. mediocris*, and Loveridge's Sunbird, *N. loveridgei*, which is endemic to the Uluguru Mountains. This theory is supported by the discovery of *moreaui* in Mwanihana Forest between populations of *loveridgei* and *mediocris*. The range of *moreaui* in the Udzungwa Mountains must be very limited since *mediocris* has been found on Luhombero Mountain only 30 km to the west (R.J. Stjernstedt & D.C. Moyer, pers. comm.), and at Kilanga, the type-locality of *N. mediocris fuelleborni*, 90 km to the south-west."

It is important here to note that D.C. Moyer (in litt.) clarifies the above statement, saying that he and R.J. Stjernstedt visited the western edge of Ndundulu Forest, not Mt. Luhombero proper, and that they are uncertain whether the birds they observed in the Ndundulu Forest were *N. mediocris*.

Jensen & Brøgger-Jensen (1992) state, "The 'double-collared' sunbirds recorded from Mwanihana Forest have so far been assigned to Moreau's Sunbird (Stuart *et al.* 1987) because specimens from this locality agreed in plumage colours with specimens from Nguru Mountains, the type locality of *N. moreaui*. Other populations of double-collared sunbirds from the Udzungwas have been referred to *Nectarinia mediocris fuelleborni* (Britton 1980) with the type locality of *fuelleborni* being at Kalinga near Dabaga. Recently A. Beakbane and E. Baker (pers. comm.) have pointed out that male Eastern Double-collared Sunbirds netted at Mufindi show considerable variation in plumage colours. This variation extends in some birds well into the concept of *N. moreaui*, calling in question the validity of this form in the Udzungwas. Until this matter has been thoroughly investigated we prefer to keep the systematic position of the double-collared sunbirds in the Udzungwas an open question." (Note that Dabaga and Mufindi are about 70 km and 150 km, respectively, to the south-west of Mt. Luhombero, and that Mufindi is at the southern extreme of the Udzungwa Mountains.)

Although no birds were netted during this survey, we had close observations in good light of many double-collared sunbirds on Mt Luhombero (7°48'32"S; 36°36'22"E). All of these sunbirds can be described as follows: primaries broadly edged with olive-yellow, bill long and curved, head and throat iridescent green, narrow bluish-purple chest band below which lies a broad, red chest band with much yellow down either side of the red, belly and vent yellowish-olive or dusky-olive. In good light,

the primaries are distinctly golden-rufous or golden-olive both in the male and female. In this regard, the wings are more similar to those of *N. loveridgei* and of Regal Sunbird *Nectarinia regia* than to *N. mediocris*. The yellow on the sides of the chest is more extensive than for *N. mediocris mediocris*. The birds we observed matched well the descriptions of Sclater & Moreau (1933), Mackworth-Praed & Grant (1955), Stuart & van der Willigen (1980), and Fry et al (2000) for Moreau's Sunbird.

We conclude, therefore, that in addition to Mwanihana Forest, there are at least two populations of Moreau's Sunbird in the Udzungwa Mountains. This is not surprising given that the western edge of Mwanihana Forest is just 15 km from the eastern edge of the Luhombero Forest. It should also be noted that Moreau's Sunbird occurs on all four of the mountains which form a chain to the north-east of Mt Luhombero, the nearest of which, the Uvidunda Mountains, are only about 75 km away. Indeed, it might be surprising if Moreau's Sunbird were not the double-collared sunbird found over the higher reaches of the Luhombero Forest.

It appears that in the Luhombero Forest, Moreau's Sunbird is present only at the higher elevations (above *c.* 1800 m). We saw no species of double-collared sunbird below 1800 m. Moreau's Sunbird seems to be the only species of double-collared sunbird in the Luhombero Forest. As far as we are aware, there is no certain record for *N. mediocris fuelleborni* in any of the forests of West Kilombero, including Luhombero and Ndundulu, nor in Mwanihana Forest. This supports the statement of Fry *et al.* (2000) that Moreau's Sunbird "..is the only double-collared sunbird on the mountains where it occurs."

In the Luhombero Forest, Moreau's Sunbird occurs over an altitudinal range of 1800–2500 m. Here it is strongly associated with habitats with a mix of bamboo, trees and a well-developed herbaceous layer. During our survey, *N. moreaui* was frequently seen taking nectar from the flowers of the shrub *Tecomaria capensis*. Moreau's was the only sunbird observed above 1800 m, being abundant between 2000–2400 m. The Olive Sunbird was not found above 1700 m. Although *N. rufipennis* was not observed on Mt. Luhombero during this survey, it is present at low densities up to at least 1500 m (Butynski unpubl. data), and occurs up to 1600 m in the contiguous Ndundulu (western Luhombero) Forest (Dinesen *et al.* 1993, 2001). In short, where it occurs on Mt. Luhombero, our limited observations indicate that Moreau's Sunbird is often the only sunbird present.

Moreau's Sunbird is reported to occur from 1500–1900 m in the Udzungwas (Jensen & Brøgger-Jensen 1992, Stuart *et al.* 1987), and from 1200–1850 m in other parts of its range (Stattersfield *et al.* 1998). As noted above, during this survey Moreau's Sunbirds were found in the Luhombero Forest from 1800–2500 m. Given its altitudinal range (1500–2500 m), geographic position between *N. mediocris usambarica* and *N.*

mediocris fuelleborni, and proximity to *N. loveridgei*, the Udzungwas (especially Mt. Luhombero) may be an especially suitable area for research on the taxonomic status of Moreau's Sunbird. In particular, it would be of interest to compare closely individuals collected at 2500 m on Mt. Luhombero with the type of *N. mediocris fuelleborni*, and to involve these individuals in a molecular study. The types for *N. moreaui* (*C. m. moreaui*) and *N. mediocris fuelleborni* should also be revisited to reassess how they differ.

Green-throated Greenbul *Andropadus (nigriceps) chlorigula* (Least Concern). Seen and heard only on Mt. Luhombero. This very distinctive and noisy greenbul was not found below 1800 m but is one of the most common birds from 1800–2500 m., broadly sympatric with Moreau's Sunbird. The vocalisations of this greenbul are noticeably distinct from those of *Andropadus nigriceps kikuyuensis* in western Uganda and in the highlands of Kenya (see Keith *et al.* 1992).

Fülleborn's Boubou *Laniarius fuelleborni fuelleborni* (Least Concern). Seen twice and fairly often heard on Mt Luhombero from 1900–2350 m.

Swynnerton's Robin *Swynnertonia swynnertoni* (Vulnerable). Uncommon: only one seen, on 9 November on Mt Luhombero at 1600 m (7°48′32′′S; 36°36′10′′E), on the ground in a bird party with Yellow-throated Woodland-warbler *Phylloscopus ruficapilla*, Olive Sunbird, White-tailed Crested Flycatcher *Elminia albonotata*, Dappled Mountain Robin *Modulatrix orostruthus*, and Dark-backed Weaver *Ploceus bicolor*. Previously reported only in the Nyumbanitu, Ukami, Ndundulu, Mwanihana, and Udzungwa Scarp Forests (Dinesen *et al.* 2001).

Spot-throat *Modulatrix stictigula* (Least Concern). Uncommon: only one seen and one other heard, on 11 November on Mt Luhombero in bamboo at 2000 m (7°48′32′′S; 36°36′10′′E). This observation for the Spot-throat is 150 m higher than previously reported in the literature for the Udzungwas (Stuart *et al.* 1987, Jensen & Brøgger-Jensen 1992), but this species is known at 2400 m in the Ulugurus, and Dinesen (in litt.) also has a record at 2400 m in the Udzungwas. Stattersfield *et al.* (1998) give the upper range for the Spot-throat as 2700 m but give no reference. These birds were on the ground in a party with Bar-throated Apalis *Apalis thoracica*, Forest Batis *Batis capensis*, White-starred Robin *Pogonocichla stellata*, Green-throated Greenbul, Lemon Dove *Aplopelia larvata*, Moreau's Sunbird, Olive-flanked Robin Chat *Cossypha anomala grotei*, and a pair of white-eyes.

The two white-eyes were seen extremely well at a distance of less than 2 m; eye-rings were broad, ventral parts bright yellow, dorsal parts bright olive, and the forehead olive (not yellow). The literature for the Udzungwas indicates that the only white-eye in the region is the Yellow White-eye *Zosterops senegalensis stierlingi* (e.g., Britton 1980, Stuart *et al.* 1987, Jensen & Brøgger-Jensen 1992). The bright yellow underparts are characteristic of that species. The broad eye-ring is, however, more indicative of the Mountain White-eye *Zosterops poliogaster cf. mbuluensis*. It is interesting to note, therefore, the taxonomic changes for *Zosterops* in the Eastern Arc Forests as implemented by Fjeldså & Rabøl 1995, Cordeiro 1998, and Stattersfield *et al.* 1998.

Dappled Mountain Robin *Arcanator (Modulatrix) orostruthus* (Vulnerable).
Uncommon: only one seen at 1600 m on Mt. Luhombero (see above under Swynnerton's Robin). Previously only reported in the Nyumbanitu, Ukami, Ndundulu, Mwanihana and Udzungwa Scarp Forests (Dinesen *et al.* 2001).

White-winged Apalis *Apalis chariessa* (Vulnerable).
Uncommon: only one seen, on 2 November in Iwonde Forest at 1480 m (7°56'32"S; 36°37'41"E), in a bird party with Brown-headed Apalis *Apalis alticola*, Cardinal Woodpecker *Dendropicos fuscescens*, Square-tailed Drongo, and Dark-backed Weaver. This species is previously reported only in West Kilombero, Mwanihana, Kawemba, Kiranzi-Kitungula and Udzungwa Scarp Forests (Dinesen *et al.* 2001).

Tape recordings were made of one or more calls of all of the restricted-range species mentioned above, including *X. udzungwensis*, *N. rufipennis*, and *N. moreaui*.

Acknowledgements

David Moyer, Francoise Dowsett-Lemaire, Lars Dinesen, Tom Evans, and Leon Bennun commented on the manuscript. Permission to undertake research in the Udzungwas was provided by the Tanzania Commission for Science and Technology, and by Tanzania National Parks. Senior Park Warden, A. H. Seki and his staff at the Udzungwa Mountains National Park provided valuable logistic support. The Margot Marsh Biodiversity Foundation, Zoo Atlanta, WWF-Tanzania, Conservation, Food & Health Foundation, and the University of Georgia Research Foundation provided financial assistance for this research. We wish to extend our appreciation and thanks to all of these people, institutions and organisations.

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Scopus 23: 13-28, July 2003 Received June 1999